Bi-weekly Wetland and Stream Corridor Restoration Update
Issue 43
December 19, 2002

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Welcome to the Bi-weekly Wetland and Stream Corridor Restoration Update. This Web site

- Provides current information on wetland and river corridor restoration projects
- Recognizes outstanding restoration projects
- Offers a forum for information sharing

We welcome the submission of articles and announcements related to your restoration project. Just send your write-up to EPA's contractor at restorationupdate@tetratech-ffx.com or mail it to Rebecca Schmidt, Bi-weekly Restoration Update Coordinator, Tetra Tech, Inc., 10306 Eaton Place, Suite 340, Fairfax, VA 22030. We will carefully consider your submission for inclusion in a future update. If your submission is selected, please note that it might be edited for length or style before being posted. Because this Web site is meant to be a public forum on restoration information, we cannot post any information that is copyrighted or information that advocates or lobbies for any political, business, or commercial purposes or has the appearance of doing so.

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Feature Article

Hydrological Restoration in Tosohatchee State Reserve

Florida's ecosystems depend on the dynamic interaction of forces associated with hydrology, lightning fires, and interactions between native species. Human-caused disturbances such as large-scale drainage, disruption of sheetflow, exclusion of natural fires, introduction of invasive exotic species, loss of predatory species, and landscape fragmentation have disrupted these processes. The resource management goal of the Florida state park system is to protect, restore, and maintain examples of the full diversity of natural communities within the state, while providing appropriate recreational opportunities. Often, attaining this goal requires active restoration of the natural processes that once sustained Florida's complex biological systems. A good example of this restoration approach is currently underway in central Florida's Tosohatchee State Reserve.

The 30,700 acres that make up the Tosohatchee State Reserve have been shaped over time by alternating cycles of fire and flood, creating a mosaic of marshes, swamps, pine flatwoods, and hammocks (fertile areas usually higher in elevation than surrounding land characterized by hardwood vegetation and deep humus-rich soil). The reserve's wetlands perform essential water storage and cleaning functions for water entering the St. John's River. Prior to the state's purchase of the reserve in 1977, landowners constructed a network of canals and ditches that significantly altered historic surface and subsurface drainage patterns, water retention times, and water levels. Such alterations have resulted in a general loss of the habitat mosaic which once occurred in the reserve.

The Florida Park Service implemented several wetland restoration projects on the reserve that have reduced the diversion of surface and groundwater resources and allowed formerly wet areas to remain inundated for longer periods. The Park Service restored the original topography by backfilling approximately 15 miles of large drainage ditches, using fill from the berms that were created when the ditches were originally excavated. To accelerate the restoration process, the project team planted wetland species in the place of other native plant species that had moved into the area after the drainage was originally altered. Nonnative species which thrived under the artificially dry conditions were removed using environmentally safe chemicals and careful use of heavy equipment.

The restoration effort further enhanced and restored the natural surface flow of water by elevating approximately 4 miles of an internal park road and installing culverts. This had the additional benefit of

providing visitor access to wetland areas. Additionally, ongoing selective harvesting of several hundred acres of pine plantations will restore a more natural tree density and create an evapotranspiration rate similar to what occurred prior to the artificial drainage.

The recovery of these restored areas has been nothing short of astonishing, and the results have been more rapid and far reaching than originally expected. The return of former water levels and retention times in wetland areas has allowed native wetland species to return. Native wetland plant species are thriving, and a variety of native wildlife species are returning to the area. Although the hydrological conditions have been greatly improved in some areas, additional work still remains. Future projects will include elevating and installing culverts under additional internal roads, installing plugs or weirs in roadside and power line ditches, and constructing bridges or low-water crossings where park roads cross creeks.

The tremendous expense for projects of this magnitude is a limiting factor for the Florida Park Service. Fortunately, portions of Tosohatchee are being used as mitigation "credits" for private developments and other government agency projects. The Florida Department of Transportation used the reserve as mitigation for wetland impacts incurred during several highway improvement projects. This successful relationship between development and resource restoration is an excellent example of cooperation between the public and private sector for the benefit of Florida's environment. Information for this story was gathered from the Florida State Park system's Web site www.dep.state.fl.us/parks/ncr/successes.htm.

If you'd like your project to appear as our next featured article, e-mail a short description to restorationupdate@tetratech-ffx.com.

Five-Star Restoration Projects Update

The goal of EPA's Five-Star Restoration Program is to bring together citizen groups, corporations, youth conservation corps, students, landowners, and government agencies to undertake projects that restore streambanks and wetlands. The program provides challenge grants, technical support, and peer information exchange to enable community-based restoration projects. A few Five-Star Restoration projects are being revisited to see if the modest amount of funding (between $5,000 and $20,000) has helped the local restoration partners achieve their goals.

Project Title: **Northern Great Lakes Regional Wetlands Restoration**
Five-Star Grant: **$10,000**
Grant to: **Sigurd Olson Environmental Institute**
Location: **Eileen/Ashland, Wisconsin**
Grant Year: **1999**

Original Project Description:
The Sigurd Olson Environmental Institute, in partnership with the Wisconsin Conservation Corps, will restore wetland vegetation on degraded farmland in the headwaters of the Chequamegon Bay of Lake

Superior. Restoration efforts also will be made by individuals from The Nature Conservancy, the State Historical Society, University of Wisconsin-Extension, U.S. Forest Service, and U.S. National Park Service. After the restoration is in place, the site will be maintained and monitored to demonstrate the principles of wetland restoration to the public. Through volunteer work parties, college student participation, and programs for private landowners, youth groups, and schoolchildren, this hands-on project will increase knowledge and promote support for wetland restoration efforts in the region.

Project Update:
The project identified and restored 10 individual sites to demonstrate sedge meadow restoration techniques in the farm fields established along the coastal wetland area at the head of Lake Superior's Chequamegon Bay. The site is the location of the Northern Great Lakes Visitors Center. The area restored totaled approximately 0.25 acre of the 160-acre site. The training of Wisconsin Conservation Corps crew members (which was provided by interns from the Sigurd Olson Environmental Institute) and demonstration of both feasibility and techniques provide the groundwork that will restore approximately 60 acres of the site to this threatened habitat in the next 2 years. Some of the established sites adjoin a boardwalk system that provides education opportunities for all visitors to the center.

In addition to the wetland focus under this grant, complementary restoration work proceeded on the grounds for boreal forest restoration including wildflowers.

The Sigurd Olson Environmental Institute of Northland College has entered a 5-year Memorandum of Understanding with the U.S. Fish and Wildlife Service to continue sedge meadow restoration planning and implementation on the adjoining Whittlesey Creek National Wildlife Refuge. **[Updated April 2002.]**

Project Title: **McMurray Natural Area/Poudre River Restoration**
Five-Star Grant: **$10,250**
Grant to: **Larimer County Conservation Youth Corps**
Location: **Fort Collins, Colorado**
Grant Year: **1999**

Original Project Description:
The Larimer County Youth Conservation Corps (LCYCC), in partnership with the Larimer County Parks and Open Space, the Colorado Youth Corps Association, Centennial High School, and Trees, Water & People, will work to restore an eroding streambank in the McMurray Natural Area. The project will use native plants and bioengineering techniques to restore an eroded bank of the Poudre River. The McMurray Natural Area is on the edge of an Enterprise Zone, and the county-owned property has historically been difficult to fully maintain. The LCYCC is able to provide the much-needed workforce to restore the area while at the same time offering educational and life benefits to the youth participating in the program.

Project Update:
The land involved in this grant is going through a sale. Until the sale is final, physical labor completed at the McMurray Natural Area is restricted to cleanups, trail maintenance, and the removal of nonnative

species. Instead, teams of LCYCC members have completed wetland and water corridor projects at six different sites. In 1999 and 2000 summer and year-round AmeriCorps teams worked on bank restoration, the construction of a wetland as a biofilter for storm drainage, and an educational boardwalk through a wetland.

Several team members received educational and experiential training on bank restoration, wetlands, ecosystems, and maintaining natural areas. Team members also developed environmental education sessions for local students.

Looking at the work involved at the different sites, the numbers are quite impressive. Overall, teams contributed nearly 2,000 hours to restoration including planting more than 800 plants at one site, and an additional 800 cattail plants at two other sites.

The hope for the project in the future is to continue to maintain the natural area for the community. **[Updated June 2002.]**

For more information on EPA's Five-Star grant program, visit www.epa.gov/owow/wetlands/restore/5star.

Community-Based Restoration Partnerships

Community Pitches in to Create Schoolyard Habitat and Outdoor Classroom

On Saturday, February 16 and again on March 23, 2002, members of Pennsylvania's Elk Creeks Watershed Association (EWCA) pitched in with Oxford Area schoolteachers, students, and local Boy Scouts to clear trails that would provide access to the new outdoor classroom created around a restored wetland area on the grounds between Nottingham and Elk Ridge Schools.

These 2 workdays were part of a longstanding commitment to construct the new outdoor education area. In 2001 EWCA began work with LandStudies, Inc., a firm specializing in wetland design, and Oxford Area teachers and students to design the outdoor education and wetland area. Funded by a total of $120,000 in grants from Pennyslvania's Growing Greener Program, the National Fish and Wildlife Foundation, the Pennsylvania Department of Environmental Protection, and Oxford Borough, teachers and wetland design specialists drew up plans to revamp a jumbled area of overgrowth into a wetland area suitable for outdoor education opportunities. Restoration of the wetland area included restoring natural drainage patterns, clearing invasive species, planting native flora, and laying weed-suppressing fabric. Local Cub Scouts donated bird boxes to house kestrels and wood ducks.

The recently installed trails will allow students to access the wetland area without harming the newly created ecosystems. In addition, teachers created a new curriculum for students in kindergarten through 12th grade to ensure the best possible use of the new educational resource.

On November 20, 2002 everyone who had a hand in restoring the wetlands came to Elk Ridge for a grand opening celebration. The wetland and accompanying nature trails are now open for the community's use. But just because the trials are open and the wetlands are wetter than ever, this is not the end of the story. "We think of this as a never-ending project," commented Martha Straus, ECWA board member, "there are still connections that need to be made."

For more information on the Oxford Schools Wetland Project, visit the ECWA Web site at www.elkwatershed.org/project.oxford.school.htm.

More Wetlands Help Fish and Wildlife in a Washington Park

On November 16, 2002, Friends of Luther Burbank Park, staff from Washington's King County, and community volunteers helped improve fish and wildlife habitat by restoring 3 acres of wetlands at Luther Burbank Park on Mercer Island. Volunteers helped replace invasive species with native plants and shrubs while maintaining existing native plants.

Luther Burbank Park is a 77-acre park located on the northeast end of Mercer Island. The park has ¾ of a mile of Lake Washington waterfront, and almost 3 miles of meandering pathways for walking and bird watching. Much of the park has been left undeveloped to foster a variety of wildlife including 135 species of birds, 50 species of waterfowl, raccoons, beaver, muskrats, tree frogs and rabbits. Many of these animals live in the wetlands that occupy the north and south ends of the park.

Wetlands at Luther Burbank and throughout the region provide a healthy habitat for fish and wildlife while protecting water quality by filtering water runoff. Luther Burbank wetlands, and many others along the lake, are damaged by silt and invaded by exotic vegetation due to the lowering of the lake many decades ago.

Volunteer efforts are the key to the success of wetland restoration at Luther Burbank and other King County wetlands. King County Parks and Natural Lands receive help from more than 5,000 volunteers giving over 30,000 hours each year. For more information about wetland restoration at Luther Burbank Park or other volunteer opportunities, contact King County volunteer coordinator, Tina Miller, at (206) 296-2990 or tina.miller@metrokc.gov. For more information about the park see www.metrokc.gov/parks/rentals/pomdec98.htm.

If you are part of an innovative community-based partnership that is working to restore river corridors or wetlands, we'd like to hear from you. Please send a short description of your partnership to restorationupdate@tetratech-ffx.com.

Achieving Restoration Results

Rice, Research, Ducks, and Degrees

by Jay Huseby, Red Lake Band of Chippewa Indians
(Reprinted from the Fall 2002 Issue of *Birdscapes*, a U.S. Fish and Wildlife Service publication—http://library.fws.gov/Birdscapes/fall02/Ppus.html.)

The Red Lake Band of Chippewa Indians' Department of Natural Resources and its partners have successfully completed the first phase of the Red Lake Farm/Kiwosay Waterfowl Habitat Restoration Project begun in 1998. Located within the prairie-forest transition zone of northwestern Minnesota, where about half of the state's wild rice is grown, the project's goal was to increase wildlife values of production-wild-rice paddies by restoring or enhancing adjacent habitats. Because the project area is within a major waterfowl migration corridor, and due to the attractiveness of wild-rice paddies to waterfowl and other wildlife, completion of project objectives has had an immediate positive effect on wildlife populations.

During the course of the project, partners restored more than 930 acres to wetland or upland nesting habitat, enhanced almost 600 acres, and placed and maintained 117 nesting structures. More than 20 waterfowl species per acre, including ducks, geese, and swans, have been recorded feeding in food plots or paddies during peak spring migration periods. Of the upland nesting ducks, an estimated 400 ducklings fledged each year of the project. Management efforts have increased local wildlife use of wetland and upland habitats, and baseline data collected will be used by other agencies to guide management of similar habitats.

The diverse assemblage of wildlife found at the site has provided a number of research and educational opportunities during the project's implementation. Four graduate students from three universities collected data on local populations of waterfowl and nongame birds, and three tribal college students completed their summer internship requirements during the span of the project. Data has been presented in two master of science theses and will appear in two doctoral dissertations. Each year of the project, as part of the Red Lake High School's Job Shadowing Program, students interested in careers in natural resources fields visited project sites and assisted with activities. Project activities have been highlighted in a number of publications, such as the *Minnesota Waterfowler* and the *National Wetlands Newsletter*, and the project's activities have been the subject of presentations at several professional meetings.

The tribe's participation in this North American Wetlands Conservation Act-supported project will provide benefits to its Department of Natural Resources that go far beyond the completion of specific project objectives. This project has facilitated new working relationships with federal, state, and private wildlife agencies and provided unique educational opportunities that will continue to benefit resident and migratory birds.

For more information, contact Jay Huseby, Red Lake Band of Chippewa Indians, Department of Natural Resources, P.O. Box 279, Red Lake, Minnesota 56671, 218-79-2115, jhuseby@paulbunyan.net.

Life in a Montane Meadow

by Candy Lupe, White Mountain Apache Tribe
(Reprinted from the Fall 2002 Issue of *Birdscapes*, a U.S. Fish and Wildlife Service publication—http://library.fws.gov/Birdscapes/fall02/Ppus.html.)

Montane meadows are an important habitat in the arid Southwest, since they support diverse and productive communities including amphibians, migratory birds, fish, wetland plants, and people. Arizona's White Mountain Apache Tribe has undertaken numerous projects to restore these habitats, locally known as "cienegas," using combinations of active and passive treatments. Two such projects, Maverick Cienega and Ess Cienega, were supported with a $26,000 North American Wetlands Conservation Act grant. The tribe added $30,500 and the U.S. Fish and Wildlife Service, $3,270, to take the projects to their completion.

In the 1960s, Maverick Cienega had been the site of a major logging town, which was located on a hill overlooking the montane meadow. When the town was abandoned in the 1970s, inhabitants left a lot of debris behind. The cienega's restoration began with partners hauling out the trash and closing a road that crossed the meadow. They fenced most of the meadow to rest it from grazing pressures, and transfigured the old town site into an outdoor recreation and education center. The fence on the upper half of the meadow protects the water supply for the center. Partners also pruned decaying willow trees to stimulate their growth and value for migratory hummingbirds. All together, these treatments have comprehensively transformed an intensively used "urban" area back to a scenic wetland.

At the Ess Cienega, project partners fenced a large area to allow the native wetland plants to flourish and built small riffle formations in the meadow from rocks and gravel available onsite. The riffles trap sediments and help raise the meadow's water level. The bare, eroding banks surrounding the cienega were contoured and seeded with native grasses to promote stabilization.

Both cienegas were reseeded and transplanted with native sedges. Recovery of wetland vegetation is already evident at both sites, and the tribe's wetlands specialists are inventorying the wetland plants that grow in these protected areas.

The restoration of these cienegas provides a resource that can be used to demonstrate the value of wetlands to visitors at the sites, including tribal youth, who participate in the annual summer ecological education camps held at the Maverick Cienega. Although the town is gone, the meadows still teem with life!

For more information, contact Candy Lupe, White Mountain Apache Tribe, P.O. Box 2109, Whiteriver, Arizona 85941, 928-338-4346 x284, clupe@wmat.nsn.us.

If you are part of an innovative restoration project that has had positive results, we'd like to hear from you. Please send a short description of your project to restorationupdate@tetratech-ffx.com.

Funding for Restoration Projects

Wildlife Habitat Incentive Program
The Wildlife Habitat Incentive Program is a voluntary program for people who want to develop and improve wildlife habitat on private lands. It provides both technical assistance and cost sharing to help establish and improve fish and wildlife habitat. Participants work with USDA's Natural Resources Conservation Service to prepare a wildlife habitat development plan in consultation with a local conservation district. The plan describes the landowner's goals for improving wildlife habitat, includes a list of practices and a schedule for installing them, and details the steps necessary to maintain the habitat for the life of the agreement. The cost share amount is usually less than $10,000. For more information, contact Martha Joseph at 202-720-7157; e-mail: martha.joseph@usda.gov; Web site: www.nrcs.usda.gov/NRCSProg.html.

National Coastal Wetlands Conservation Act
Funds generated from excise taxes on sport fishing equipment and boat gasoline taxes are set aside in the Sport Fish and Restoration Account of the Aquatic Resources Fund for the acquisition, restoration, and enhancement of coastal wetlands systems. This program funds only state agencies, for example the State Coastal Conservancy or Wildlife Conservation Board. Grants are available to coastal states and require either a 25 or 50 percent match. For more information, contact Sally Valdes-Cogliano, U.S. Fish and Wildlife Service, Division of Fish and Wildlife Management and Habitat Restoration, 4401 North Fairfax Drive, Room 840, Arlington, VA 22203. Phone: 703-358-2201; e-mail: sally_valdescogliano@fws.gov, Web site: www.fws.gov/cep/cwgcover.html.

National Fish and Wildlife Foundation Challenge Grant Programs
The National Fish and Wildlife Foundation funds projects to conserve and restore fish, wildlife, and native plants through challenge grant programs. The Foundation awards challenge grants to projects that address priority actions promoting fish and wildlife conservation and the habitats on which they depend, works proactively to involve other conservation and community interests, leverages Foundation-provided funding, and evaluates project outcomes. Federal, state, and local governments, educational institutions, and nonprofit organizations are welcome to apply for a general challenge grant throughout the year. Project preproposals must be received by June 1, 2003. For more information about challenge grant programs, visit www.nfwf.org/programs/grant_apply.htm.

Please send any news you have on funding mechanisms available to local community organizations to restorationupdate@tetratech-ffx.com.

News and Announcements

President Bush Signs Historic Wetlands Conservation Bill

In a White House ceremony on December 2, 2002, President Bush signed a bill to reauthorize the North American Wetlands Conservation Act (NAWCA), one of the most important conservation programs ever. NAWCA provides challenge grants for wetland conservation projects across North America. Through the Act, groups match every dollar of federal money with at least one dollar or more from nonfederal sources. The result of this partnering provides twice as many dollars for projects, with some projects generating an additional three to four dollars for every federal dollar. Since it was first enacted in 1989, NAWCA has helped fund more than 960 wetland conservation projects in all 50 U.S. states, Canada, and Mexico. Nearly 9 million acres of critical wildlife habitat have been restored and protected through NAWCA.

Upon signing the Act, President Bush said: "Today, we're taking important action to conserve North America's wetlands, which will help keep our water clean and help provide habitat for hundreds of species of wildlife. Through this legislation, the federal government will continue its partnership with landowners, conservation groups, and states to save and improve millions of acres of wetlands. The North American Wetlands Conservation Reauthorization Act shows our concern for the environment and our respect for future generations of Americans."

"Since 1991, more than $462 million in federal grants have helped to encourage $1.3 billion in contributions from others," said President Bush. "Together, these funds have restored streams and rivers, re-established native plants and trees, and acquired land that is home to more than a third of America's threatened and endangered species. Because about 75 percent of the wetlands are held privately, we need to encourage cooperation with our landowners. This legislation shows that when government and landowners and conservationists and others work together, we can make dramatic progress in preserving the beauty and the quality of our environment."

"NAWCA is one of the most effective conservation programs in history," said Ducks Unlimited (DU) President John Tomke, who was invited to visit with the President before the ceremony. "The program's unique structure encourages partnerships among government agencies, individuals, and private organizations like Ducks Unlimited. Through these partnership projects, NAWCA has been responsible for protecting and restoring millions of acres of critical wildlife habitat across North America in the places where wildlife need it the most. DU is proud to be one of the many partners involved in NAWCA, and we look forward to continuing this vital work."

For the full text of the Ducks Unlimited press release, see www.ducks.org/news/Bush_Signs_NAWCA.asp. To view the entire text of the bill signing ceremony see www.whitehouse.gov/news/releases/2002/12/20021202-1.html.

Florida Purchases Rare Wetland Habitat

On November 26, 2002, Florida Governor Jeb Bush and Cabinet members unanimously approved the latest addition to the Perdido Pitcher Plant Prairie. This purchase offers added protection to Perdido Bay while safeguarding Naval Air Station (NAS) Pensacola from the threat of encroachment. "This significant purchase merges our mission of environmental protection with that of national defense," said Florida Department of Environmental Protection (DEP) Secretary David B. Struhs. "When one single project protects water quality and rare flora, and at the same time upholds the critical mission of Florida's military installations, it's a win for all taxpayers."

In partnership with The Nature Conservancy, DEP has invested close to $24 million to acquire half of the 7,661-acre project adjacent to NAS Pensacola. While providing recreational opportunity, the purchase of an additional 186 acres protects 2½ of Perdido Bay from development, and maintains the viability of naval aviation training essential to NAS Pensacola.

Located west of Pensacola, Perdido Pitcher Plant Prairie supports one of the largest stands of white-top pitcher plants in Florida. This rare and carnivorous plant is unique to the Gulf Coast and found only between the Apalachicola and Mississippi Rivers. Almost 100 other rare plants and animals depend on the unusual wet prairie habitat including the alligator snapping turtle, sweet pitcher plant, and Chapman's butterwort.

Today's vote brings state ownership of the prairie to 3,396 acres. DEP's Division of Recreation and Parks will manage the property as part of the Tarkiln Bayou Preserve State Park. For more information contact Kathalyn Gaither at (850) 245-2112 or Greg Brock at (850) 245-2784. To view the original press release see www.dep.state.fl.us/secretary/comm/2002/02_1126.htm.

U.S. Fish and Wildlife Service Grants Fund Wetland Conservation Projects in 15 States

On November 18, 2002, the U.S. Fish and Wildlife Service announced that it will award more than $15.7 million in grants to 15 states to conserve, restore and protect coastal wetlands. States awarded grants for fiscal year 2003 under the National Coastal Wetlands Conservation Grant Program are Alabama, Alaska, California, Connecticut, Florida, Hawaii, Maryland, Massachusetts, New Jersey, New York, Ohio, Oregon, Texas, Virginia and Washington.

The grants, which will help fund 21 projects, will be awarded through the National Coastal Wetlands Conservation Grant program and will be supplemented by $33 million from state and private partners. The Service makes yearly matching grants to coastal states and U.S. territories for projects involving the acquisition, restoration or enhancement of coastal wetlands. Projects are administered for long-term conservation benefits to wildlife and habitat.

"Our state and private partners are key to protecting this nation's natural heritage for future generations to enjoy," said Service Director Steve Williams. "Through cooperative projects such as those funded by Coastal Wetlands Conservation Grants, we can help provide habitat for hundreds of species, and in many cases, public use opportunities as well."

Partners in this year's Coastal Wetlands Conservation Grant projects include state natural resources agencies, land trusts, universities, several timber companies, private landowners, and conservation groups such as Ducks Unlimited and The Nature Conservancy.

To date, the Service has awarded more than $120 million in grants to 25 states and one U.S. territory under the National Coastal Wetlands Conservation Grant Program. When the 2003 grant projects are complete, they will have protected or restored more than 17,000 acres; nearly 150,000 acres will have been protected or restored since the wetlands grant program began in 1990.

National Coastal Wetlands Conservation grants are awarded through a competitive process. The program is one of three conservation efforts funded by the 1990 Coastal Wetlands Planning, Protection and Restoration Act. Funding for the program is generated from excise taxes on fishing equipment and motorboat and small engine fuels. These taxes are deposited into the Sport Fish Restoration Account of the Aquatic Resources Trust Fund (commonly called Wallop-Breaux after its Congressional sponsors).

For more information, contact the National Coastal Wetlands Conservation Grant Program, U.S. Fish and Wildlife Service, 4401 North Fairfax Drive, Room 840, Arlington, VA 22203 or Division of Federal Aid, U.S. Fish and Wildlife Service, 4401 North Fairfax Drive, Room 140, Arlington, VA 22203; or check the program's Internet home page at http://www.fws.gov/cep/cwgcover.html.

Descriptions of the 2003 National Coastal Wetlands Conservation Grant projects can be found at http://news.fws.gov/newsreleases/r9/6770BB4E-2FAF-424B-8DEDFEEAAFC60956.html.

Upcoming Conferences and Events

New Listings

Building Viable Habitats: Resources for the Ecological Landscape

February 28–March 1, 2003
Boxborough, Massachusetts

This conference is cosponsored by the Ecological Landscaping Association, University of Massachusetts, and the New England Wildflower Society. The workshops, presented by experts, will provide information on ecological lawn care, soil management, pest control, tree and shrub care, ecological design, weed management, and more. In addition, this year's conference will include an Eco-Marketplace featuring more than 50 vendors of products and services related to ecological landscaping and conservation. This conference may be a good opportunity to connect with horticultural professionals knowledgeable about wetland plants and species. For more information, see www.ela-ecolandscapingassn.org/events.htm or contact Ecological Landscaping Association's Conference Coordinator, Nancy Askin at (978)425-0101 or Kathleen Carroll at (413)545-0895.

Wetlands '03: Ninth Annual Conference and Membership Meeting of the NYS Wetlands Forum

March 11–12, 2003
Saratoga Springs, New York

The ninth annual meeting of the New York State Wetlands Forum will examine a variety of wetland-related issues and developments and discuss the statewide and regional impacts of these issues. Sessions will include both research-related topics and information for local government officials. Abstracts are currently being sought on a variety of topics including tribal wetlands, habitat assessment, waterfront revitalization programs, legislative and regulatory updates, urban wetland restoration, tidal wetlands and special aquatic sites, and nutrient cycling in wetlands. For more information about the conference, or for a complete listing of topics, visit www.wetlandsforum.org or e-mail info@wetlandsforum.org.

Society for Ecological Restoration, Northwest Chapter, Regional Conference: The Restoration Toolbox

March 24–28, 2003
Portland, Oregon

This conference, sponsored jointly by the Northwest Chapters of the Society for Ecological Restoration and the Society of Wetland Scientists, will focus on the tools of the trade for ecological restoration—the practical information you can take back to work and apply on the ground. The conference will include multiple field trip and workshop opportunities, followed by 3 days of technical programs focusing on the practical applications of restoration on a variety of topics. A large exhibitor space will host restoration suppliers and firms. Registration information and a tentative schedule of events can be found at the Web site, http://216.119.67.178/2003conf/Index.htm.

To post your restoration news and announcements, please send information to restorationupdate@tetratech-ffx.com.

Restoration-Related Web Sites

www.blm.gov/nstc/index.html
National Science and Technology Center. The Bureau of Land Management's National Science and Technology Center in Denver takes the lead role in the agency's development and implementation of standardized riparian-wetland guidelines. The guidelines relate to inventory, classification, management, monitoring, evaluation, and data handling. This Web site contains a link to the searchable BLM library and also provides contact information for experts on riparian and restoration-related topics. *This Web site would be useful for anyone seeking printed resources on riparian or wetland restoration.*

www.musconetcong.org
Musconetcong Watershed Association. This watershed association was created to protect and enhance the Musconetcong River in New Jersey. It works to restore the river through education and community-action projects. The Web site contains links to a variety of New Jersey wildlife and river-based organizations and also includes a photo gallery of river-related projects. *This Web site is a good example of how an organization can keep a community informed and involve them in the restoration process.*

www.elkwatershed.org/Newsletter.htm
Elk Creeks Watershed Association Newsletter Page. The online newsletter of the Elk Creeks Watershed Association contains a variety of gardening tips and landscape suggestions that will help improve water quality. The newsletter also contains a native plant list for Pennsylvania. *This Web site would be useful for anyone looking for simple ways homeowners can use the land they own to help improve water quality.*

http://water.montana.edu/default.htm
Montana Water. This site is designed and maintained by the Montana Water Center, Montana State University, Bozeman, and serves as a comprehensive resource for those working with Montana water resources. The site includes an online database of technical watershed resources, a database of grants and other funding resources, information about policy and legislation, educational resources, and links to maps and other resources. *This Web site would be useful for anyone looking for information about water issues in Montana and other northwestern states.*

www.wgby.org/edu/crei/index.html
Connecticut River Education Initiative (CREI). CREI consists of a unique consortium of nonprofit educational institutions from four New England states working together to establish a broad spectrum of educational resources inspired by the study of the Connecticut River watershed. CREI has provided a tool for teachers to incorporate watershed education into their classroom and provides grants to allow students to take part in watershed restoration and species diversity projects. *This web site provides*

information about the Connecticut River watershed and offers watershed education resources for teachers to use in their classrooms.

www.homepage.montana.edu/~stream
Stream and Riparian Area Management Home Study Course. This course was designed to provide livestock producers with ideas on how to more effectively manage streams and riparian areas on their land. Lessons included in this course include Streams and Watersheds, Riparian Areas: Functions and Conditions, Grazing Management for Healthy Riparian Areas, and Riparian Area Management Plans. *This Web site would be useful for anyone looking for information on how to effectively manage riparian areas.*

www.macdnet.org/ripar.htm
Montana Conservation Districts. This Web site outlines the roles of and provides links to local conservation districts in Montana, many of whom provide education and funding for wetland and streambank restoration projects. The site also provides information on the importance of wetland and riparian areas. *This Web site would be useful for anyone looking for more information on the role of a conservation district or looking for contact information for Montana Conservation Districts.*

www.greatplains.org/resource/index.htm
Great Plains Resources. This Web site promotes sustainable use of the land and resources of the Great Plains. The resources page provides information on conserving and restoring wetlands and riparian areas including funding programs, restoration techniques, and related legislation. *This Web site would be useful for anyone seeking information on the wise use of, or restoration of, riparian or wetland areas.*

Let us know about your restoration-related Web site. Please send relevant URLs to restorationupdate@tetratech-ffx.com.

Information Resources

Aquatic Ecosystems and Global Climate Change Potential Impacts on Island Freshwater and Coastal Wetland Ecosystems in the United States
by the Pew Center on Global Climate Change

This report outlines the potential threats global climate change has on lakes, streams, rivers, and wetlands throughout the United States. The report concludes that climate change will introduce stress into wetlands and other sensitive aquatic habitats that could result in decreased water quality, interfere with fish reproduction, and change the geographic distribution of species. To download the complete report, visit www.pewclimate.org/projects/aquatic.cfm.

Midwestern Ephemeral Wetlands Brochure
by the Declining Amphibian Populations Task Force

Midwestern Ephemeral Wetlands presents a definition of these ephemeral wetland habitats, describes their seasonal changes, ties in surrounding upland habitats, and details reasons for concern. Development of this full-colored, full-sized brochure was sponsored by the Declining Amphibians Populations Task Force. For copies contact: Edward J. Hammer, WQ-16J, USEPA Region 5, 77 West Jackson Boulevard, Chicago, IL 60604-3507; phone: 312-886-3019; e-mail: hammer.edward@epa.gov.

A Stream Corridor Protection Strategy for Local Governments
by the University of Virginia's Institute for Environmental Negotiation

This handbook is designed to help implement many facets of the Chesapeake 2000 agreement. In particular, it aims to protect forested stream buffers and help local governments develop local watershed plans. It describes how to devise an effective stream protection strategy, provides tools such as the use of zoning to protect local streams, provides case studies of successful projects, and shows ways to engage the local community. For more information, visit www.virginia.edu/~envneg/ien_projects_featured.htm#stream.

If you'd like to publicize the availability of relevant information resources, please send information to restorationupdate@tetratech-ffx.com.